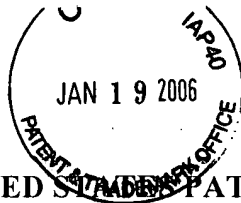


Docket No.: 050212-0632



PATENT

IFC

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	:	Customer Number: 20277
Katsuya NAGAYAMA, et al.	:	Confirmation Number: 2568
Application No.: 10/520,619	:	Group Art Unit: 1731
Filed: January 10, 2005	:	Examiner: Not yet assigned
For: OPTICAL FIBER AND METHOD OF FABRICATING THE SAME	:	

REQUEST FOR CORRECTED FILING RECEIPT

Mail Stop OFR
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Attached is a copy of the Filing Receipt received from the U.S. Patent and Trademark Office in the above-referenced application. It is noted that there is an **error in the number in individual claims**. Attached is a copy of the listing of claims and a copy of the application transmittal letter, which evidence that **the number of independent claims should read: 2**. It is requested that a corrected filing receipt be issued.

Respectfully submitted,

McDERMOTT WILL & EMERY LLP

Arthur J. Steiner
Registration No. 26,106

600 13th Street, N.W.
Washington, DC 20005-3096
Phone: 202.756.8000 AJS:sln
Facsimile: 202.756.8087
Date: January 19, 2006

**Please recognize our Customer No. 20277
as our correspondence address.**



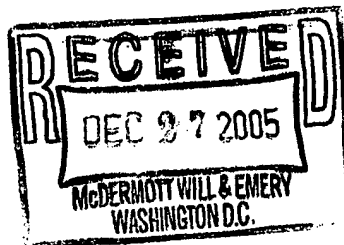
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APPL NO.	FILING OR 371 (c) DATE	ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	DRAWINGS	TOT CLMS	IND CLMS
10/520,619	01/10/2005	1731	900	50212-632	10	10	1

20277
MCDERMOTT WILL & EMERY LLP
600 13TH STREET, N.W.
WASHINGTON, DC 20005-3096



CORRECTED FILING RECEIPT



OC000000017714074

Date Mailed: 12/22/2005

Receipt is acknowledged of this regular Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please mail to the Commissioner for Patents P.O. Box 1450 Alexandria Va 22313-1450. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

Applicant(s)

Katsuya Nagayama, Kanagawa, JAPAN;
Keisei Morita, Kanagawa, JAPAN;

Power of Attorney: The patent practitioners associated with Customer Number 20277.

Domestic Priority data as claimed by applicant

This application is a 371 of PCT/JP03/08788 07/10/2003

Foreign Applications

JAPAN 2002-201795 07/10/2002

If Required, Foreign Filing License Granted: 12/22/2005

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US10/520,619**

Projected Publication Date: Not Applicable

Non-Publication Request: No

Early Publication Request: No

Title

Optical fiber and a method for manufacturing same

Preliminary Class

065

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

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Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

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Claims

1. A fabricating method of an optical fiber comprising the steps of:

a drawing step wherein an optical fiber preform
5 having a core region and a cladding region formed on the periphery of said core region is heated and drawn with a drawing furnace into an optical fiber;

a heat treatment step wherein said optical fiber drawn with said drawing furnace is annealed by a
10 heating furnace disposed downstream of said drawing furnace; and

a cooling step wherein said optical fiber annealed with said heating furnace is introduced with a temperature of fiber at 700°C or more into a cooling means disposed downstream of said heating furnace, and
15 is cooled forcibly by said cooling means,

wherein in the course of said heat treatment step, said optical fiber is annealed on such annealing conditions that meet the requirements that the cooling
20 speed of said optical fiber is to be 2000°C/second or less, and that the period of annealing time L/V_f is equal to or longer than the relaxation time τ , the length of said heating furnace being designated as L (m), the line speed of said optical fiber being designated as V_f (m/second), the viscosity of said
25 optical fiber at the entrance of said heating furnace

being designated as ηS (Pa-second), the tension of said optical fiber per a unit cross sectional area being designated as K (Pa), and the relaxation time thereof being defined as $\tau = \eta S / K$.

5 2. The fabricating method of the optical fiber according to claim 1, wherein, in said heat treatment step, said optical fiber is annealed by said heating furnace at a temperature of 800-1600°C.

10 3. The fabricating method of the optical fiber according to claim 1, wherein, in said heat treatment step, said optical fiber is annealed by said heating furnace at a temperature of 1100-1600°C.

15 4. The fabricating method of the optical fiber according to claim 1, wherein, in said cooling step, said optical fiber is introduced into said cooling means at a temperature of 700-1300°C.

20 5. The fabricating method of the optical fiber according to claim 1, wherein, in said drawing step, said heat treatment step and said cooling step, the line speed of said optical fiber is 300m/minute or more.

 6. The fabricating method of the optical fiber according to claim 1, wherein, in said heat treatment step, said optical fiber is annealed by said heating furnace for 0.03-0.8 seconds.

25 7. The fabricating method of the optical fiber according to claim 1, wherein said core region is doped

with Ge in such a quantity of dopant that the relative refractive-index difference [Ge] expressed by % with respect to pure SiO₂ satisfies a condition [Ge]≥0.3%.

5 8. The fabricating method of the optical fiber according to claim 1, wherein said cladding region has one or more cladding layers comprised of either of pure SiO₂, SiO₂ doped with Ge or SiO₂ doped with F respectively.

10 9. An optical fiber comprising a core region and a cladding region formed on the periphery of said core region, wherein said core region is doped with Ge in such a quantity of dopant that relative refractive-index difference [Ge] expressed by % with respect to pure SiO₂ satisfies a condition [Ge]≥0.3%,

15 the Rayleigh scattering coefficient A (dB/km·μm⁴) and the transmission loss α_{1.00} (dB/km) at a wavelength of 1.00μm are 97% or less of the reference value A₀ and α₀ respectively expressed by the following formulas:

$$A_0 = 0.85 + 0.29 [\text{Ge}]$$

20 α₀ = 0.86 + 0.29 [Ge], and

the difference in transmission loss Δα_{1.38} at a wavelength of 1.38μm between before and after hydrogen treatment is 0.15dB/km or less.

25 10. The optical fiber according to claim 9, wherein said cladding region has one or more cladding layers comprised of either of pure SiO₂, SiO₂ doped

with Ge or SiO_2 doped with F respectively.

TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371

50212-632

U.S. APPLIC. NO. (if known, see 37 CFR 1.5)
Not yet assigned

INTERNATIONAL APPLICATION NO
PCT/JP03/08788

INTERNATIONAL FILING DATE
July 10, 2003

PRIORITY DATE CLAIMED
July 10, 2002

TITLE OF INVENTION
OPTICAL FIBER AND METHOD OF FABRICATING THE SAME

APPLICANTS FOR DO/EO/US
Katsuya NAGAYAMA, Keisei MORITA

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).
4. ☐ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
 - a. ☒ is transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☐ has been transmitted by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US)
6. ☐ A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
 - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☐ have been transmitted by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendment has NOT expired.
 - d. ☒ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 16. below concern other document(s) or information included:

11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☒ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☐ A FIRST preliminary amendment.
☐ A SECOND or SUBSEQUENT preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☒ Other items or information.
 1. International Search Report prepared by JPO.
 2. Front page of Published International Application and copy of International Application as filed.
 3. PCT/IB/304, 308

U.S. APPLIC. NO. (if known, see 37 CFR 1.50) Not yet assigned		INTERNATIONAL APPLICATION NO. PCT/JP03/08788		ATTORNEY'S DOCKET NUMBER 50212-632	
				CALCULATIONS	PTO USE ONLY
17. <input checked="" type="checkbox"/> The following fees are submitted: <div style="display: flex; justify-content: space-between;"> <div>Basic National Stage Fee</div> <div>\$300.00</div> </div> <div style="display: flex; justify-content: space-between;"> <div>Search Fee</div> <div>\$500.00</div> </div> <div style="display: flex; justify-content: space-between;"> <div>Examination Fee</div> <div>\$200.00</div> </div> <div style="text-align: right; margin-top: 10px;"> ENTER APPROPRIATE BASIC FEE AMOUNT = </div>				<div style="font-size: 2em; margin-top: 20px;">400</div>	
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				\$ 0.00	
Claims	Number Filed	Number Extra	Rate		
Total Claims	10 -20 =	0	x \$50.00	\$0.00	
Independent Claims	2 -3 =	0	x \$200.00	\$0.00	
Multiple dependent claim(s) (if applicable)			+ \$360.00	\$0.00	
Size Fee (\$250.00 per 50 sheets over 100)				\$0.00	
TOTAL OF ABOVE CALCULATIONS =				\$1,000.00	
Reduction by 1/2 for filing by small entity, if applicable. Verified Small Entity Statement must also be filed. (Note 37 CFR 1.9, 1.27, 1.28).				\$0.00	
SUBTOTAL =				\$1,000.00	
Processing fee of \$130.00 for furnishing the English translation later than the <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				\$ 0.00	
TOTAL NATIONAL FEE =				\$1,000.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property				\$40.00	
TOTAL FEES ENCLOSED =				\$1,040.00	
				Amount to be: refunded	\$
				charged	\$1,040.00
a. <input type="checkbox"/> A check in the amount of \$ _____ to cover the above fees is enclosed. b. <input checked="" type="checkbox"/> Please charge my Deposit Account No. <u>500417</u> in the amount of <u>\$1,040.00</u> to cover the above fees. A duplicate copy of this sheet is enclosed. c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. <u>500417</u> . A duplicate copy of this sheet is enclosed.					
NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.					
SEND ALL CORRESPONDENCE TO: Customer Number 20277 Arthur J. Steiner McDERMOTT WILL & EMERY LLP 600 13 th Street, N.W. Washington, DC 20005-3096 Telephone: 202.756.8000 Facsimile: 202.756.8087				<div style="text-align: center; margin-bottom: 10px;"> </div> <div style="border: 1px solid black; padding: 2px;">SIGNATURE</div> <div style="border: 1px solid black; padding: 2px;">Arthur J. Steiner</div> <div style="border: 1px solid black; padding: 2px;">NAME</div> <div style="border: 1px solid black; padding: 2px;">26,106</div> <div style="border: 1px solid black; padding: 2px;">REGISTRATION NUMBER</div> <div style="border: 1px solid black; padding: 2px;">January 10, 2005</div> <div style="border: 1px solid black; padding: 2px;">DATE</div>	